ISSUE Alert | MAY 29, 2009

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PHMSA Issues Advisory Bulletin Regarding Microalloyed High Grade Pipe That May Not Meet Minimum Specifications

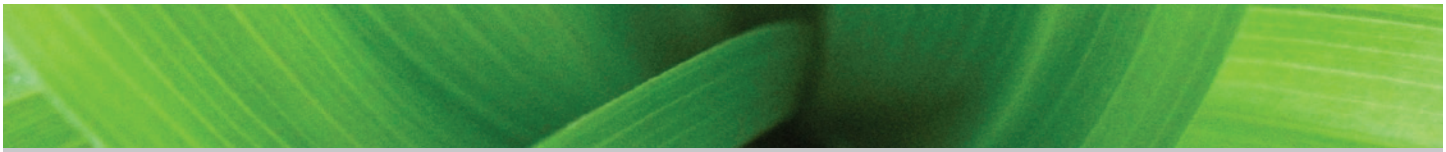
On May 14, 2009, the Department of Transportation's Pipeline and Hazardous Material Safety Administration (PHMSA) issued an Advisory Bulletin advising owners and operators of newly constructed natural gas and hazardous liquids pipeline systems that recently installed microalloyed high grade line pipe (generally Grade X-70 and above) may exhibit inconsistent chemical and mechanical properties. According to PHSMA, tests of this type of pipe have shown yield strength and tensile strength properties that do not meet minimum American Petroleum Institute (API) specification requirements. In some cases, the affected pipe may successfully pass strength testing methods contained in current specifications, but may lead to a future pipeline integrity issue. The Advisory Bulletin recommends that pipeline operators review manufacturing procedure specifications (MPS) for the production and rolling of the steel plate or coil used in recent projects.

BACKGROUND: PROBLEMS INVOLVING RECENTLY INSTALLED HIGH GRADE PIPE

Several recently installed natural gas transmission pipeline systems experienced field hydrostatic test failures or excessively expanded pipe joints of large diameter, microalloyed high grade line pipe (generally Grade X-70 and above). Metallurgical, mechanical, and chemical composition tests of these pipes revealed that the faulty pipe had yield strengths, tensile strengths and/or chemical compositions that did not meet the requirements of the API Specification for Line Pipe-5L (API 5L), 43rd edition for the specified pipe grade. Some of the pipe that was installed in these projects had yield strength up to 15% below the API 5L specification, despite documentation provided by the pipe supplier to the pipeline owner that the pipe met API minimum standards. Ultimately, the presence of low yield strength line pipe installed in a pipeline system may result in increased susceptibility to excessive pipe expansion or rupture during the pre in-service field hydrostatic strength test, and could lead to a future pipeline integrity issue.

PHMSA'S ADVISORY BULLETIN

PHMSA issued the Advisory Bulletin to ensure that pipeline owners are aware of the need to investigate whether recently constructed pipelines may contain joints that do not meet API specifications. PHMSA recommends that owners and operators of newly constructed pipelines review with their pipe suppliers the MPS mill test reports and other appropriate documentation regarding the pipe laid in their systems to determine if all specification requirements have been met. PHMSA cautions that small deviations in steel rolling schedule parameters can have a pronounced effect on final mechanical properties and that the MPS should provide adequate information concerning process details and inspection methods to ensure that the materials are uniform and will meet all specification requirements. In particular, pipeline owners and operators should request detailed MPS from pipe manufacturers demonstrating that critical steel processing parameters, including but not limited to the rolling temperature, heating temperature and temperature uniformity were controlled throughout the steel rolling process.



For pipelines already in service, PHMSA advises owners and operators to review their pipe specifications, pipe steel making and rolling MPS, pipe mill test reports, and deformation tool results for both mill and in place hydrostatic tests to ensure that inconsistent mechanical and chemical properties are not inherent in microalloyed line pipe grades on all API 5L-PSL 2, X70 and X80 line pipe installed during recent construction projects.

In addition, PHMSA advises that if pipeline operators have reason to believe that their newly constructed high grade line pipe systems contain pipe joints that do not meet specifications, they should conduct technical document reviews on all high strength microalloyed line pipe, review hydrostatic test failures, and consider using methods to detect pipe expansion such as running deformation tools that detect expanded pipe in these systems. Moreover, should a pipeline owner have knowledge of earlier vintage high grade pipe in their system that may have this problem, PHMSA advises the owner to consider conducting similar technical document reviews to ensure that operating pressures and anomaly repair procedures are not being conducted outside the parameters set forth in federal pipeline safety regulations.

FOR ADDITIONAL INFORMATION

Van Ness Feldman regularly counsels clients on issues related to pipeline construction, permitting, safety, and operation. Specifically, the firm has in-depth experience counseling clients on compliance with pipeline safety statutes and regulations. If you are interested in additional information regarding PHMSA's Advisory Bulletin, or any other energy-related federal activity, please contact Susan Olenchuk in our Washington, DC office at (202) 298-1896, or Pam Anderson in our Seattle office at (206) 623-9372, or any member of the firm's Natural Gas practice group.